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Notes on the Naiad Fauna of Northeastern Iowa.

S. W. GEISER.

In this paper are embodied the results of careful and extensive investigations carried on by the writer in the northeastern part of the state of Iowa during the past three years. The collections made, now in greater part in the Museum of the Upper Iowa University, have been made chiefly from three rivers in this section. The Wapsipinicon, a large, sluggish prairie stream with a bottom varying from the mud of the slough bottom, to sandy, gravelly, or even stony bottoms—has been systematically examined from Quasqueton, in Buchanan County, to Fairbank, in the extreme northwest portion of that county, a distance of about thirty-five miles, while occasional collections have been made as far north as Chickasaw County. The Turkey has been collected from at various points, notably at Elgin. In general characters the Turkey resembles the Wapsipinicon, but it is not nearly as large and it is also much more rapid. From the Volga, collections have been made from about fifteen miles of its course. These collections, augmented by contributions and exchanges from other streams in northeastern Iowa, gave me a fair basis for work. Specimens upon which this study is founded are contained in the Museums of the Upper Iowa University and the Chicago Academy of Sciences.

It is believed that the notes here presented may be of interest, since the work that has hitherto been carried on in the study of Naiades of Iowa has been rather confined to southern and southeastern Iowa. For whatever we know of the distribution of the freshwater mussels appearing in the state, we are indebted to a number of naturalists. Lea¹ (1857) and Pratt² (1876) described new species from the waters of the state, and general catalogues have been prepared by Witter³ (1878)

(1) Proc. Acad. Nat. Sci. Phila. IX: p. 84. (1857).

(2) Proc. Dav. Acad. Sci. 1876: pp. 167-168.

(3) Quart. Joun. Conch. 1878: pp. 385-394.

* October 15, 1910.—Pages 229 to 244.

and Keyes¹ (1888). Other papers by Pratt⁵, Tryon⁶, Call⁷, Shimek⁸, H. M. Smith⁹ and Kelley¹⁰, etc., cast further light on limited areas. The latter and more recent catalogue of the naiades of Iowa, which was based on previous work as well as on original investigation, enumerates 66 "species" of Unionidæ which Keyes includes in the following genera: ANODONTA, 11; MARGARITANA, 7; UNIO, 48. A number of the enumerated species have since been reduced to the synonymy of other forms, but we believe that the number of reported species will be increased upon a more thorough examination of the streams of the state. From a study of his localities, it is apparent that the work of Keyes was confined to the Mississippi, Iowa, Cedar, Des Moines, Raccoon, Missouri, Rock (Northwestern Iowa), and Shell Rock rivers, and to Okoboji and Spirit Lakes, and some of his statements as to the distribution of certain Uniones will have to be modified as the result of subsequent investigations.

To the following specialists we are indebted for literature, material, advice and help: Mr. Frank C. Baker, Curator of the Chicago Academy of Sciences; Dr. Paul Bartsch, of the Division of Mollusks of the United States National Museum; and to Dr. R. Ellsworth Call of the De Witt Clinton High School, New York City. To Mr. Hartness de W. Taylor, the writer is greatly indebted for valuable services rendered in the field.

List of Species.

FAMILY UNIONIDAE, FLEMING, 1828.

GENUS LAMPSILIS RAFINESQUE, 1820.

1. *L. alatus* (Say, 1816) Baker, 1898.
Occurs quite rarely in the Wapsipinicon and Turkey rivers.
2. *L. anodontoides* (Lea, 1834) Baker, 1898.
Common in the Wapsipinicon.
3. *L. ellipsiformis* (Conrad, 1836) Simpson, 1900.
Volga river at Fayette; Wapsipinicon river at Independence and various other localities.

(4) Bull Essex Inst. XX: pp. 61-83. (1888).

(5) Proc. Dav. Acad. Sci. 1876: pp. 165-167; *ibid.* 1878: pp. 156-162.

(6) Am. Jour. Conch. 1865: pp. 68-70.

(7) Bull. Des M. Acad. Sci. I: pp. 5-57. (1885).

(8) Conch. Exch. 1888: p. 114.

(9) Sci. Amer. Aug. 5, 1899: pp. 86-87, w. figs. Bull. U. S. Fish Com. 1898: pp. 289-314, w. 31 pls.

(10) Proc. Ia. Acad. Sci. VIII: pp. 81-84. (1900).

4. *L. fallaciosus* (Smith, 1899) Simpson, 1900.
Occurs somewhat abundantly in the Wapsipinicon at Independence.
5. *L. higginsii* (Lea, 1857) Simpson, 1900.
One male example of this puzzling species found in the Wapsipinicon at Independence.
6. *L. gracilis* (Barnes, 1823) Baker, 1898.
Rare: Wapsipinicon River.
7. *L. ligamentinus* (Lamarck, 1819) Baker, 1898.
The most common species in the area examined.
8. *L. luteolus* (Lamarck, 1819) Baker, 1898.
Common to all drainage systems in this section, usually in company with the preceding species.
9. *L. parvus* (Barnes, 1823) Baker, 1898.
Very abundant locally in the Wapsipinicon at Independence.
10. *L. rectus* (Lamarck, 1819) Baker, 1898.
Common: Wapsipinicon and Turkey rivers.
11. *L. ventricosus* (Barnes, 1823) Stimpson, 1851.
A large, almost rayless, ovate form occurs in company with smaller, thinner individuals of this very variable species in all three river systems;—this latter form resembles Call's figure of "*Unio subovatus*" in his paper on the Mollusca of Indiana,* but his figure shows the beaks as angular, a character which he declares constant. In all specimens collected by us, the beaks are evenly rounded. The ovate form seems to be connected by intermediate links with the smaller, broadly rayed form. Very abundant.

GENUS *PLAGIOLA* RAFINESQUE 1820.

12. *Pl. donaciformis* (Lea, 1828) Baker, 1898.
Wapsipinicon: rare.
13. *Pl. elegans* (Lea, 1831) Baker, 1898.
Occurs rarely in the Wapsipinicon.

GENUS *TRITOGONIA* AGASSIZ, 1852.

14. *Tr. tuberculata* (Barnes, 1823) Simpson, 1900.
Very rare: Wapsipinicon river at Fairbank.

GENUS *STROPHITUS* RAFINESQUE, 1820.

15. *St. edentulus* (Say, 1829) Conrad, 1853.
Not common: Wapsipinicon river.

* 24th An. Rept. Dept. Geol. and Nat. Hist. Indiana, pp. 335-536, w. plates. (1899).

GENUS *ANODONTA*, BRUGUIERE 1792.16. *A. grandis* Say, 1829.

The nacre of the species, which is normally bluish white, is often excessively roughened and salmon colored, a pathologic condition brought about by the work of a parasitic trematode. Other species of *Anodonta*, as well as *Symphynota costata* have been observed as similarly affected. Lea's *A. salmonia* is merely *A. grandis* thus diseased. This species is common to all streams of Iowa.

17. *A. corpulenta* Cooper, 1834.

Common in the Wapsipinicon and Turkey, usually in company with the preceding species.

18. *A. imbecillis* Say, 1829.

Collected only in the Wapsipinicon at Independence, where it is common in the slough near the Second bridge. Professor Arey also reports this species from the Cedar River at Cedar Falls.

GENUS *ANODONTOIDES* SIMPSON, 1898.19. *Ano. ferussacianus* (Lea, 1834) Baker, 1898.

Occurs in all the rivers of northeastern Iowa.

GENUS *SYMPHYNOTA* LEA, 1829.20. *S. complanata* (Barnes, 1823) Lea, 1830.

Very common in the Wapsipinicon and Turkey rivers. In the former stream, the species attains a diameter of from six to eight inches.

21. *S. compressa* Lea, 1829.

Dead shells referable to this species are found quite abundantly along the Volga at Fayette, but thus far we have obtained no living animals. Keyes gives as the results of his work on the mollusca the following locality: "A few specimens taken in the Des Moines River at Des Moines: very rare."

22. *S. costata* (Rafinesque, 1820) Simpson, 1900.

Abundant: Wapsipinicon, Volga, and Turkey Rivers.

GENUS *ALASMIDONTA* SAY, 1818.23. *Alas. calceola* (Lea, 1830) Simpson, 1900.

Found quite abundantly in the Volga at Fayette and Lima.

24. *Alas. truncata* B. H. Wright, 1898.

Wapsipinicon, abundant; Volga, at Fayette, a few dead shells found.

GENUS *UNIO* RETZIUS, 1788.

25. *Unio crassidens* Lamarck, 1819.
Occurs rather sparingly in the Wapsipinicon at Independence. Hitherto reported only from the Iowa and Mississippi rivers.
26. *Unio gibbosus* Barnes, 1823.
Represented by numerous specimens from the Wapsipinicon.

GENUS *QUADRULA* RAFINESQUE, 1820.

27. *Qu. coccinea* (Conrad, 1836) Baker, 1898.
Occurs sparingly in the Turkey, Wapsipinicon, and Volga drainage systems.
28. *Qu. lachrymosa* (Lea, 1828) Baker, 1898.
Wapsipinicon: rare.
29. *Qu. plicata* (Say, 1816) Baker, 1898.
very abundant in the Wapsipinicon. It is found in the Volga, nor have we seen any specimens from the Turkey.
30. *Qu. pustulosa* (Lea, 1831) Baker, 1898.
Wapsipinicon: rather rare.
31. *Qu. rubiginosa* (Lea, 1829) Baker, 1898.
Wapsipinicon: abundant; also found in the Turkey and Volga rivers.
32. *Qu. undulata* (Barnes, 1823) Baker, 1898.
This species occurs not rarely in the Wapsipinicon. It is readily distinguished from the closely related *Qu. plicata* by the greater inflation of the shell and prominence of the beaks in that species. In *Qu. undulata* the shell is rather compressed and the beaks are low.

Independence, Iowa,
May 30, 1910.

New Plants from North Dakota. II.

J. LUNELL.

Gutierrezia Greenei sp. nov.

Radix ligneus longitudine variabilis, plerumque autem brevis, caudice crasso ligneo (uno vel duobus) caules protinus emittente, vel ramis plerisque ligneis e superficie superiore caudicis oriundis, qui caules singulos usque quaternos gerunt. Caules 1-3 dm. alti, herbacei, scabri, in caudice confertissimi,

valde foliosi, praesertim apicem versus. Plantae depauperatae paucos tantum et remotos, plantae autem luxuriosae plurimos et densos caules habent. Folia lineari—lanceolata, in caule 1.5-3 cm. longa, 2-4 mm. lata, in ramis 1.5-2 cm. longa, 1 mm. lata, minutatim punctata, margine ciliolata, apice acuto, colore splendido saturate viridi et quodammodo flavescente. Inflorescentia caulem superiorem occupans ramosa, foliis minoribus foliosissima, ramis eius terminatis in cymo valde contracto, sive plano sive rotundato. Involucra 4.5-5 mm. alta, cylindrica vel nonnihil turbinata, viscida, summa in 3-4 capitulorum glomerulis sessilia, lateralia pedunculata. Bractee involucri in 3-4 seriebus positae, late lanceolatae, virides vel apicibus viridibus pallidae, obtusae vel acuminatae. Flores pallide vel plerumque saturate flavi. Flores radiati 4-6, flores discoidei 3-5.

The ligneous root of variable length, but mostly short, with one or two thick ligneous crowns directly emitting the stems, or there are several ligneous ramifications from the upper surface of the crown, with 1-4 stems from each of them. Stems 1-3 dm. high, herbaceous, scabrous, densely tufted on the crown, very leafy, especially so upwards. Depauperate plants have only a few distant stems, but well developed plants have very numerous crowded stems, of which I counted 51 in one such plant. Leaves linear-lanceolate, on the stems 1.5-3 cm. long, 2-4 mm. wide, on the branches 1.5-2 cm. long, 1 mm. wide, minutely punctate, with ciliolate margins and pointed upper ends, their color being a deep green, with a yellow tint. Inflorescence branching out from above the middle of the stem, very leafy and with leaves of the small kind, its branches terminating in a very contracted, either flat-topped, perfect cyme, or the peripheral branches perhaps not reaching exactly as high up as the central ones. Involucres 4.5-5 mm. high, cylindrical or somewhat turbinate (becoming so the more in dried plants because the upper part offers less resistance to pressure and is flattened out more than the lower), viscid, the uppermost sessile in glomerules of 3-4, the lateral ones peduncled. Involucral bracts in 3-4 series, broadly lanceolate, green or pale with green tips, blunt or pointed. Flowers varying from a light yellow to a deep yellow color. Rays 4-6, disk-flowers 3-5, there being usually more rays than disk-flowers in a head.

This species belongs to the same group as *G. diversifolia* Greene, and *G. scoparia* Rydb. The former is rather loosely tufted, has an inflorescence of large, turbinate involucres in an open and not flat-topped cyme, and 8 or 10 disk-flowers. *G. scoparia* is larger, having stems often 4 dm. in length, and its involucres are over 5 mm. long and oblong-turbinate.

The plant is common in high, dry, sunny prairie soil in central North Dakota, and its flowering time is August-September. It is one of the few high prairie plants that successfully resisted the drought of 1910. The type was collected at Leeds, N. Dakota.

I deem it delightfully appropriate to name this strikingly beautiful plant in honor of Dr. Edw. L. Greene, the singularly conspicuous landmark in modern botanical history, *princeps ille rei herbariae principum*.

Gutierrezia fulva sp. nov.

Caules 15-18 cm. alti, in caudice perenni, ligneo aliquantum dispersi, fere glabri, angulati. Folia linearia vel linearilanceolata, in caulibus 1-3 cm. longa, 1-2 mm. lata, in ramis 0.5—1.5 cm. longa, filiformia—1 mm. lata, colore pallide et obscure viridi. Inflorescentia cymum apertum, planum vel rotundatum, formans. Involucra 5-6 mm. longa, turbinata, lateralia longe-pedunculata et saepe simplicia, media in glomerulis 2-4 capitulorum sessilia vel subsessilia. Bractee involucri in 3-4 seriebus dispositae, ovatae, viridibus, obtusis apicibus pellucidae. Flores fulvi, discoidei plerumque 5, radiati 6-8.

Stem 5-18 cm. high, loosely tufted on a ligneous persistent caudex, nearly glabrous, angled. Leaves linear or linear-lanceolate, 1-3 cm. long, 1-2 mm. wide on the stems, 0.5—1.5 cm. long, filiform—1 mm. wide on the branches, of a rather dull, dark green color. Inflorescence in an open, flat—or round-topped cyme. Heads 5-6 mm. long, turbinate, the peripheral long-peduncled and often simple, the central sessile or nearly so, in glomerulis of 2-4. Bracts of the involucre in 3 or 4 series, ovate, hyaline with green, obtuse tips. Flowers deep yellow. Disk-flowers usually 5, rays 6-8.

The species belongs to the same group as *G. diversifolia* Greene, which has rays 5 or 6, disk-flowers 8 or 10, *G. scoparia* Rydb., which is larger in all its parts, has lanceolate outer bracts and oblong-turbinate involucre, and *G. Greenei*, which is densely tufted and has a strikingly different color of its foliage, contracted inflorescence and rays and disk-flowers numerically different.

The plant grows on dry, sunny hills or hillsides and was collected on August 28, 1908, by the writer at Des Lacs, Ward County.

Achillea lanulosa Nutt. var. *arachnoidea*, var. nov.

Caulis laxo arachnoideus. Folia caulina 15-28, strictae vel laxe sericeo-pubescentia.

Stem loosely arachnoid, stem leaves 15-28, appressedly or loosely silky pubescent.

In woodland thicket, Turtle Mountains, N. Dak., July, 1910.

Plantago major L, var. *luxuriosa*, var. nov.

Planta luxuriosa, folia erecta, 7-11 nervata, late ovato-orbicularia, apice retuso et basi rotunda vel cordata, amplissima 12-14 cm. diametro, petioli lati et canaliculati, scapi erecti.

Plant exuberant, leaves upright and 7-11-nerved, broadly ovate-orbicular, with obtuse apex and round or cordate base, the largest 12-14 cm. in diameter, petioles broad and channeled, scapes erect.

In low meadow land of the Turtle Mountains, N. Dakota, near St. John, July, 1910.

Salicornia rubra A. Nels., var. *prona* var. nov.

Planta ramosa, et rami fundum petentes.

Profusely branched, and the branches bent down towards the ground.

In saline soil, Devil's Lake, North Dakota, collected on August 18, 1910.

Helianthus nitidus sp. nov.

Perennis. Rhizoma crassum, tuberosum. Caulis 6-10 dm. altus, in parte superiore ramosior, strigoso-pubescent apicem versus, ceterum glabratus, saltem aetate. Folia splendide viridia, oblongo-ovata, 6-10 cm. longa, 3-5 cm. lata, coriacea, juxta basim 3-nervata, in caule breviter petiolata, in ramis sessilia vel subsessilia, serrata, in lamina superiore scabra, in lamina inferiore strigoso-tomentosa, capillis strigosis longioribus in nervis operta, superiora quidem basi abrupte contracta, alterna vel opposita, inferiora basi angustata et opposita, nonnumquam omnia vel nonnulla in tribus verticillata. Petioli paulum alati, marginibus ciliatis, partim amplexantes, inter oppositos sicut connati. Involucra 3-5 cm. diametro, numerosa. Bracteae involucri lanceolatae, lamina et margine inferiore ciliis longis, albis praetexta, margine autem superiore breviter ciliata. Flores radiati 13-20, 1½ cm. longa, 7 mm. lata.

Plant with a fleshy, thick, perennial tuber-bearing rootstock. Stem 6-10 dm. high, very much branched above, strigose-pubescent in the upper part, else glabrate, at least in age. Leaves bright green, oblong-ovate, 6-10 cm. long, 3-5 cm. wide, leathery, 3-nerved near the base, on the stem short-petioled, on the branches sessile or nearly so, serrate, scabrous above, strigose-tomentose beneath with longer, strigose hairs on the veins, the upper alternate or opposite, abruptly contracted at base, the lower opposite, narrowed at base; sometimes all or part of the leaves are verticillate in 3's. Petioles somewhat winged, with ciliate margins, partly clasping, somewhat connate when the leaves are opposite. Heads 3-5 cm. in diameter,

numerous. Bracts of the involucre lanceolate, long-acuminate, spreading, in two series, or all having nearly the same length, with long spreading white hairs on the margin and the surface of the lower half, on the upper margin short-ciliate. Rays 13-20, $1\frac{1}{2}$ cm. long, 7 mm. wide.

This species is related to *H. tuberosus* L., which is larger in all its parts, with long-petioled leaves; its rays are 3 cm. long, 1 cm. wide.

The plant grows in rich, moist soil in ravines or other protected localities in central North Dakota, and the type was collected by myself at Butte, N. Dakota, on August 5, 1906.

Helianthus nitidus var. *camporum*, var. nov.

Lamina folii inferior scabra.

Leaves scabrous beneath.

Not rare on the open prairie. Collected at Leeds, on Sept. 8, 1910.

Helianthus apricus sp. nov.

Perennis. Rhizoma crassum, tuberosum. Caulis 6-7 dm. altus, scaber, apice albo-strigoso, simplex vel in axillis superioribus sparsim ramosus. Folia lanceolata vel anguste ovato-lanceolata, firma, plana, lamina superiore scabra, inferiore albo-strigosa, juxta basim 3-nervata, extremitatibus ambobus angustata, apice acuto, breviter petiolata, marginibus tumescentibus serrulata, 2-7 cm. longa, 5-22 mm. lata (relatione plerumque 3:1), opposita vel superiorum 1-5 alternata. Petioli cauli proxime ciliati, inter oppositos quasi connati. Involucra solitaria vel pauca, 5-6 cm. diametro. Bractee lanceolatae, longe acuminatae, divaricatae, conferte pubescentes, margine inferiore ciliis longis, albis vestitae. Flores radiati 15-20.

Perennial, with fleshy, thickened, tuber-bearing rootstocks. Stem 6-7 dm. high, scabrous, white-strigose at the top, simple or with few branches in the upper axils, and one head at the end of each branch. Leaves lanceolate or narrowly ovate-lanceolate, firm, flat, scabrous above, strigose white-hairy beneath, 3-nerved near the base, narrowed at both ends, with acute apex, short-petioled, serulate with thickened margins, 2-7 cm. long, 5-22 mm. wide, usually in the proportion of three times as long as wide, all opposite or 1-5 of the uppermost alternate. Petioles ciliate at the proximal end, somewhat connate when opposite. Heads single or few, 5-6 cm. in diameter. Involucral bracts in two rows, lanceolate, long-acuminate, spreading, with appressed pubescence, and margined below the middle with white, long, spreading hairs. Rays, 15-20.

Among related plants *H. subtuberosus* Bourgeau, has leaves narrowly lanceolate, scabrous beneath and four times as

long as wide, with densely pubescent and white-ciliolate bracts, and *H. Maximiliani* Schrad, has dull green, pinnately veined conduplicate, elongated lanceolate leaves, about 6 cm. long, 16 mm. wide, or in that proportion, and involucre bracts in four series (this last character is hardly noticeable except on the living plant).

The species grows in dry soil on the open prairie in central North Dakota. The type was collected by myself at Leeds, on September 10, 1900.

Leeds, North Dakota.

The Name of Our American Wax Bayberries.

J. A. NIEUWLAND.

Quite a number of botanists more or less recent and others even generations ago have come to the conclusion that the Linnaean aggregate genus *Myrica* like so many other of his composite groups to which he applied the name genus, should be split up, not only for convenience but to show proper phyto-logical relations. The European bayberries had been called *Gale* first by J. J. Bauhin in 1650, and nearly all botanists after him, Tournefort included, accepted the name without hesitation. Linnaeus, however, whatever other reasons he may have had for not liking the name, rejected it because it was not of Latin origin, and to make the confusion worse gave the bereaved plants the name *Myrica*, which for centuries by botanists, and still by common people where the plants grow, had been used for what Linnaeus called *Tamarix*, from *Tamariscus*. Such wanton transfer and changing of well-grounded and well-established names seems to have been a very favorite amusement of Linnaeus, and not a few of these nomenclatural piracies are unhesitatingly accepted by botanists now who hold that 1753 is the beginning of botanical nomenclature, if not botanical science as well.

In looking through the old English herbals of Parkinson* and Gerarde† one cannot but help seeing, even if only superficially acquainted with the *Species Plantarum* of Linnaeus, that this author obtained some good ideas from the two Englishmen, which have perhaps been unthinkingly accredited as original with the eighteenth century botanist. Though Parkinson and Gerarde can not perhaps be said to have used many

* Parkinson, J. *Theatrum Botanicum*, 1640.

† Gerarde, J. *The Herball or Historie of Plants*, 1597.

more binary plant names proportionately than Dodonaeus, Camerarius, Thalius or Matthioli, still the arrangement of such names in separate headings, is so striking to the eye, and the names so much resemble the Linnaean trivial names, that one can hardly help thinking that the Swedish botanist had very carefully studied the English herbals and considered their ideas of trivial names, (not at all original with them, however,) as worthy of being followed. Scores of such names could be brought forward perhaps to show that Linnaeus was much influenced by Parkinson and Gerarde, just as the latter were influenced by or even bodily copied from Clusius Dodonaeus, Tragus and Fuchs. This fact seems all the more striking when we find that Linnaeus copied even the mistakes of the other authors.

It appears that both Gerarde and Parkinson substituted *Tamariscus* for the Theophrastan names *Myrica*, whereas, the former name, if mentioned at all, was only given as a synonyme by other older botanists. Linnaeus followed the Englishmen in using the synonyme for the valid name and then thought himself free to apply the displaced name *Myrica* to any group of plants he wished. I can find no other reason why Linnaeus should have caused this confusion, though it is to be questioned whether it is worth while to try to investigate the changes of names made by him, as so many appear as deliberate and wanton robberies. This may, however, explain, if explanation is worth while, why assuming the wrong name for the Tamarisk and finding the name *Myrica*, a synonyme, he felt himself free to apply it to anything he wished, therefore, why not to the bayberries. He thus made two blunders at once, the first in depriving a plant of its older and more commonly used name even in his time, and the second mistake in using that name as a substitute for another well established and unobjectionable name of yet another plant group.

One would think that assuming 1753 as the beginning of nomenclature this confusion could not have been perpetrated, but as we shall see the post-Linnaean confusion of names is worse perhaps than that caused by the Linnaean blunder, caused too by the appeal to the same principles as prompted Linnaeus.

Small, in his *Flora of the Southern States*, on the assumption that our American plants are generically different from the European plants, the type of the *Myrica* of Linnaeus and the *Gale* of Tournefort and J. Bauhin, separated them, and used the oldest synonyme of a segregate genus, that of *Morella* of Loureiro, 1790. Dr. Greene has shown that the *Morella* of Loureiro had for its type a Cochin-Chinese plant as distinct,

if not more so, from our American plants generically, than the latter are from *Gale* Tour., 1703, or what is the same, the *Myrica*, Linn., 1737 and 1753.

Mr. I. Tidestrom, in his *Elysium Marianum*,* also distinguished the two genera by different names. He rejects the *Gale* altogether as not being a Latin name, for the same reason that *Hondbessen* and *Gansblum* of Adanson have been universally rejected in spite of their priority. The name, he says, comes from the Belgian or low Dutch *Gagel* as J. Bauhin intimates. Mr. Tidestrom gives the European plant the name *Angeia*. Dr. Greene† maintains, however, that *Gale* is admissible, as a Latin two-syllabled word, whose origin, moreover, is said to be rather from the English *Gaule* or *Gale*, saying too, that as a latinized word it was not objected to for etymological reasons during 250 years, and even after Linnaeus' attempted suppression, the word was restored by several authors, one as late as 1902.

Mr. Tidestrom gives to the American bayberries the new name *Cerothamnus*. Dr. Greene* remarks in this connection that "as regards the new name, *Cerothamnus* for the Bayberry shrubs and trees it seems as if some statement ought to have been made of the reason for ignoring Rafinesque's name *Cerophora*." Dr. Greene finds, however, that Rafinesque, like Linnaeus, transposed the plants, (or rather types in this case), and this in such a way that there is a complete uncertainty about the application of Rafinesque's name. He apparently presumes to make our American plants the type of the Linnaean genus and calls it *Cerophora*, a proceeding thus far parallel with that of Salisbury's blunder in giving the type of the genus *Nymphaea* of Linnaeus a new name, *Castalia*, and leaving *Nuphar*, the yellow pond lilies, the name *Nymphaea*. The analogy is not perfect, however, for though Rafinesque apparently left the American bayberries under *Myrica* Linn., yet the confusion is more inexplicable as some of our native species seem to be left under both names. Rafinesque, too, it would seem, wished to get rid of the name *Gale* at any cost. Dr. Greene concludes: "As for the real *Cerophora* and its applicability, the first lines of Rafinesque's paragraph indicate his purpose to have been mainly that of being rid of *Gale*, which he says is Dutch, whereas, in truth it is English. But, passing from the consideration of the name *Cerophora*, as a substitute for the Linnaean *Myrica*, to what particular

* Tidestrom, I. *Elysium Marianum*. Washington, 1910. p. 41.

† Greene, E. L. Leaflets of Botanical Observation, Vol. II, 1910, p. 102.

* l. c. p. 103.

† Rafinesque, C. S. *Alsographia Americana*, pp. 9-12, (1838).

type does the new name apply. When the author immediately after the name cites *Gale*, Tournefort, as its equivalent, we seem compelled to regard *Myrica Gale*, Linn., as its type; but, yet, the very name *Cerophora* seems to contradict that; for the gale shrub is not wax-bearing. And the thought is contradicted again when, proceeding to the two subgenera of *Cerophora* he plainly makes our exclusively American wax-bearing shrubs the typical subgenera.

There must then forever remain two opinions as to the tenebility of *Cerophora*, Raf., and I find myself at accord with the author who has proposed the new name *Cerothamnus*.*" At this stage it would seem that there is a great deal of room for quibbling about the tenebility of Rafinesque's name in spite of the perplexing confusion of his types and names, and botanists might hope to assume or reject it with a certain show of reason, unless they do as Dr. Greene and Mr. Tidestrom have done, i. e., consider *Cerophora* as a confused doubtful application, and so reject it altogether on that account alone; for a publication of a name must be clear and beyond shadow of doubt.

I find, however, that a fortunate circumstance comes to our assistance in unravelling the tangle, and solves the difficulty for all time as far as Rafinesque's name is concerned, so that there need not forever remain two opinions as to the tenebility of *Cerophora*; for the *Cerophora*, Raf., 1838, as a name for any group of bay-berries is a homonym of over thirty years standing. In fact, what is more remarkable about the matter, is that the first *Cerophora* of 1808 was applied by Rafinesque himself to a genus of fungi. In the *Medical Repository* of 1808* he had proposed the name for a new group of fungi, and the name had actually gotten into quotation in Steudel's Index.

It is not necessary to attempt to explain how Rafinesque, who was forever criticising his contemporaries for using homonyms or synonyms could have so far forgotten himself as to reduce names of his own making to the role of homonyms, unless he held in this case, as he was known to have done in other similar instances, that an author of a name may change it at will, or even replace it. I shall also leave it to the mycologists to determine what the first *Cerophora* may be, still it may not be amiss to give the short paragraph of Rafinesque in full, and let others judge as to the validity of *Cerophora*, Raf., 1808.

"*Cerophora*, (clavata, globosa, pyriformis, thamnoides, dichotoma, fastigiata, minuta, etc.) is a fine new genus akin

* The Medical Repository, 2nd Hexade, Vol. V, p. 355, (1808).

to *hydnum*, but the fructification is in horn like terminal papillae. Found in different states." *

Steudel mentions only two species of *Cerophora*, *C. clavata* and *C. capitata*, and refers both to Rafinesque, though the latter is not found in that author's list. †

A review, or rather a mere translation of the above mentioned diagnosis of Rafinesque's *Cerophora* of 1808, found its way into the *Journal de Botanique, Tome II, 1809, p. 176*. As it seems but a French rendition of the original no further note of it is of interest.

In still another work of Rafinesque printed by the author at Palermo in 1814,* another reference to the fungus genus *Cerophora* is made. The characters seem somewhat more clear, and it is evidently the publication of the genus that came to the notice of Steudel just referred to. It may be of interest to give the text completely as the work of Rafinesque is very rare.

("G. *Cerophora*.

Peride sessile on stipité, simple ou ramifié, fructification supérieure en forme des petites cornes ou pointes solides.

Obs. Ce g. ne diffère presque de l' *Hydnum* que par sa fructification supérieure, et de l' *Hericium* que par ses pointes dures et laches.

174. *Cerophora clavata* peride en massue cylindracée entièrement convert de pointes. Dans le N. Jersey.")

175. *Cerophora capitata*. Stipité, péride sphérique entièrement convert de pointes. Dans le N. Jersey.

Mr. Tidestrom's name *Cerothamnus* is then the only and oldest one for our segregated American wax bayberries, and there can not possibly be any quibbling about Rafinesque's name *Cerophora* of 1838. I shall briefly give a resumé of the synonymy of the two genera.

1. GALE, J. Bauhin, 1650,* also Tour, 1703,† Duhamel 1755,‡ and Adanson 1763.§

* Med. Rep., (1808) l. c.

† Steudel, E. Nomenclator Botanicus, Plant Crypt. (1822), p. 113.

* Rafinesque, C. S. Précis des Découvertes et Travaux Somnologiques entre 1800 and 1814. Palerme, Royale Typ. Militaire 1814. Aux dépens de l' autre.

* Bauhin, J., and Cherler, J. H., Historia Plantarum, pars. 2, p. 224, (1650).

† Tournefort, J. P. de, Act. Acad. t. 3, (1703).

‡ Duhamel du Monceau, Traité des Arbres et Arbustes, t. 1, p. 253, (1755).

§ Adanson, M., Familles des Plantes, 2nd part, p. 345, (1763).

- (*Myrica*, Linn., 1737 and 1753.¶)
 (*Cerophora* (?) Raf., 1838,** not *Cerophora*, Raf.,
 1808.††)
 (*Angeia*, Tm., 1909.§§)

2. CEROTHAMNUS, Tm., 1909.§§
 (*Morella*, Small, 1903,¶¶ not *Morella*, Lour., 1790.¶¶¶)
 (*Cerophora* (?) Raf., 1838,** not *Cerophora*, Raf.,
 1808.††)

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Pteridium, J. Agardh, A Homonym.

J. A. NIEUWLAND.

J. Agardh* in segregating *Delesseria alata* as the type of a new genus, *Pteridium* from the other *delesserias*, seems to have forgotten that the name *Pteridium* had been used by Scopoli in 1760†, for the new genus founded on the Linnaean *Pteris aquilina*, or common bracken. The genus of Scopoli called *Thelypteris* before Linnaeus has lately become again recognized as a valid one, and it certainly seems to be entitled to distinct generic standing from *Pteris*. Even Theophrastus accepted it as such and the name, *Thelypteris*, for the common bracken originated with him, a name which on the basis of absolute priority is the correct one. The custom of not accepting names prior to 1753, however, has caused much confusion, and this is but a minor instance of the kind. Until 1753 be obragated as a

¶ Linnaeus, C., *Genera Plantarum*, no. 746, p. 302, (1737).

Linnaeus, C., *Species Plantarum*, p. 1024, (1753).

** Rafinesque, C. S., *Alsographia Americana*, pp. 9-12, (1838).

†† Rafinesque, C. S., *Medical Repository*, p. 335, (1808).

§§ Tidestrom, I., *Elysium Marianum*, 1910, p. 37.

¶¶ Loureiro, J. de, *Flora Cochinchinensis*, p. 548, (1790).

¶¶¶ Small, J. K., *Flora of the Southeastern United States*, p. 337, (1903).

* Agardh, J. G. *Spec. Gen. Ord. Alg. Vol. 3, Pars. 3, p. 218. Genus 3, Lundae* (1898).

† Scopoli, J. A. *Flora Carniolica*, 1760, p. 169.

"Starting point" of our nomenclature, the *Pteridium* of J. Agardh is a homonym.

Some of the species of the genus are:

(*Pteridium* (Kutz.)[‡] J. Agardh, not of Scopoli.)

(*Pteridium*, Kutz.) as subgenus in *Hypoglossum*.[‡]

(1) *Pteridium alatum* (Hudson) J. Agardh.

Fucus alatus, Hudson.

Delesseria alata (Hudson) Lamour.

(2) *Pteridium spinulosum* (Ruprecht) J. Agardh.

(3) *Pteridium Juergensii*, J. Agardh.

(4) *Pteridium Baerii*, Ruprecht.

[‡] As subgenus under *Hypoglossum* Kg.

Kutzing, F. G. *Species Algarum*, 1849. p. 877, also

Kutzing, F. G. *Phycologia Generalis*, 1843. p. 445.

As subgenus under *Delesseria*.

Agardh, J. G. *Spec. Algar.* 2. p. 683. (1852). Vol. 3. p. 483 (1876).

Harvey, W. H. *Ner. Bor. Am.* 3, p. 94 (1853).

ERRATA.

Page 198, line 4, for *Viola Lunellii*, read *Viola subvestita*.

" 207, insert between lines 25 and 26: *Spicae laterales 1-2.5 cm. longae, angustatae, et spica quidem.*

" 207, line 27. Strike out this whole line.

